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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/769,820

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EXAMINER

HEINRICH, SAMUEL M

ART UNIT

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3742

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/769,820	<b>Applicant(s)</b> TANAKA, KOICHIRO	
	<b>Examiner</b> Samuel M. Heinrich	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4-15, 40-48 and 55-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-15, 40-48 and 55-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 10/170,739.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5, 8, 11, 14, 56, and 62 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5, line 14, "InposelstartcondensInposelender" is not a clear description.

Claims 8, 11, 14, 56, and 62 depend from unclear claim 5.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-15, 40-48, and 55-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) and USPN 5,858,822 to Yamazaki et al and USPN 6,440,785 to Yamazaki et al and USPN 4,724,222 to Feldman and USPN 3,154,371 to Johnson.

AAPA discloses (Specification, Background of the Invention, [0004]-[0022], and Figure 2) well known laser annealing apparatus comprising a linear shaped beam, but do not describe the means for expanding and condensing the beam or the cylindrical shaped stage. AAPA discloses planned substrate size of 1000 x 1200 mm and disclose 600 mm beam line length.

In USPN 5,858,822, Yamazaki et al describe (Figure 3, column 5, lines 10-36) a concave irradiation surface and a linear laser beam having a U-shaped focus line that conforms thereto.

In USPN 6,440,785, Yamazaki et al describe (Claim 12) expanding the laser beam in a first direction and condensing the laser beam in the second direction.

The use of a concave irradiation surface with a laser which has been expanded in a first direction and condensed in a second direction would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art in order to provide a relatively compact apparatus for long line length irradiation.

Feldman describes (column 6, lines 11-19) that either a convex or a concave wafer chuck can be used with an energy beam apparatus.

Johnson shows (Front Page) the well known laser apparatus comprising a concave chuck.

The beam delivery to a U-shaped irradiation surface is well known.

The use of the concave chuck surface having a length on the order of one meter would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art because the curved surface provides precise relationship with a reference surface for uniform patterning.

The instant claimed expanding and condensing means and locations thereof would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art in order to produce the linear beam corresponding to a concave work support of the claimed dimension of one meter.

With respect to the particular claimed equations, the ranges disclosed in the instant Specification (DETX (51), [0104]-[0105]), focal length ( $f_2$ ) parameters are listed from 2200 mm to 8800 mm and range of radius of curvature parameters are listed from 9000 mm to infinity. Adjusting the prior art apparatus to fall within this range and the use of a concave wafer chuck therewith would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art in order to be able to uniformly irradiate a large surface.

With respect to claims 43-45, in USPN 5,858,822, Yamazaki et al describe (column 11, lines 15-32, Figures 7A and 7B) fly-eye lenses D and D2.

Claims 13-15, 46-48, 55-60, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) and USPN 5,858,822 to Yamazaki et al and USPN 6,440,785 to Yamazaki et al and USPN 4,724,222 to Feldman and USPN 3,154,371 to Johnson as applied to claims 4-6 and 40-42 above, and further in view of USPN 7,164,171 to Yamazaki et al.

In USPN 7,164,171, Yamazaki et al describe well known YAG and YVO<sub>4</sub> laser using pulse oscillation type or continuous emission type and the use thereof would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art in order to optimize beam delivery to a particular workpiece.

Claims 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) and USPN 5,858,822 to Yamazaki et al and USPN 6,440,785 to Yamazaki et al and USPN 4,724,222 to Feldman and USPN

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3,154,371 to Johnson as applied to claims 4-6 above, and further in view of USPN 5,600,495 to Sekikawa.

Sekikawa shows well known planoconcave lens and the use thereof would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art in order to suitably distribute the energy beam at a desired distance.

### ***Response to Arguments***

Applicant's arguments with respect to the amended claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel M. Heinrich whose telephone number is 571-272-1175. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu B. Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Samuel M Heinrich/  
Primary Examiner, Art Unit 3742